DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006609
Date Inspected: 05-May-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Rob Walters	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-1: 5/05/09
a111-1 Forging to a110-1 Base Plate
QA Inspector noticed the weld repair backgouge was completed by OIW welder #T23, Mr. John Tellone, on this CJP (AWS D1.5 TC-U9a-S) a11-1 forging to a110-2 base plate, designated as weld joint #W2-12 & W2-13 and was sitting idle, pending SAW welding. QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that he wasn't sure when the SAW would begin on this weld repair.

Hinge-K Pipe Beam Assembly 102A-2: 5/05/09
a111-2 Forging to a110-2 Base Plate
QA Inspector noticed this assembly 102A-2 was sitting idle, with a pending weld repair on the CJP (AWS D1.5 TC-U9a-S) a111-2 forging to a110-2 base plate, designated as weld joint #W2-12 & W2-13.
QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that he wasn't sure when the excavation would begin on this weld repair.

Hinge-K Pipe Beam Assembly 102A-3: 5/05/09
a111-3 Forging to a110-3 Base Plate
QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-3 pipe forging to a110-3 base plate, for pipe beam assembly 102A-3 was complete and sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection. QA Inspector noticed 100% preliminary ultrasonic weld inspection was completed by OIW QC Inspectors and no rejectable indications were found.

Hinge-K Pipe Beam Assembly 102A-4: 5/05/09
a111-4 Forging to a110-4 Base Plate
QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-4 pipe forging to a110-4 base plate, for pipe beam assembly 102A-4 was complete and was sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection. QA Inspector noticed 100% preliminary ultrasonic weld inspection was completed by OIW QC Inspectors and no rejectable indications were found.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 5/05/09
a124-6 Half Fuse to a124-7 Half Fuse
QA Inspector noticed this fuse assembly 120A-1 was sitting idle in OIW Bay 3, pending the stainless steel overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 5/05/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector noticed this completed fuse assembly 120A-2 was sitting idle, pending 100% final ultrasonic weld inspection, after rough machining, on the CJP (AWS D1.5 B-U3c-S) a124-3 half fuse to a124-11 half fuse weld joint. QA Inspector noted this assembly 120A-2 would be transferred to A&G Machining, after assembly 120A-3 rough machining is complete.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 5/05/09
a124-12 Half Fuse to a124-10 Half Fuse
A & G Machining
QA Inspector arrived at A&G Machining on this date to witness OIW project manager Bill Pender and OIW Machinist perform roundness checks with a dial indicator, at specific locations and document the resulting measurements, as shown in pictures below.
QA Inspector noticed the assembly 120A-3 had been previously placed in the horizontal lathe and A&G was waiting for approval from Mr. Bill Pender and OIW machinist, for A&G to start the first cut for rough machining.
QA Inspector noticed OIW machinist had completed the roundness measurements on the outside diameter of assembly 120A-3 and Mr. Bill Pender and OIW machinist verbally gave A&G machinist approval to begin rough machining. QA Inspector spoke with A&G machinist and A&G machinist explained that the first cut pass would be at a depth of approximately .150” on this date and the remaining 2 cut passes would be approximately .150”, with a possible fourth and final cut not yet known at this point.
Mr. Bill Pender also explained to QA Inspector a photocopy of the documented resulting roundness measurements would be provided to QA Inspector.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 5/05/09

a124-13 Half Fuse to a124-4 Half Fuse
QA Inspector randomly witnessed welder #S53, Mr. Jerry Shepherd, perform submerged arc welding (SAW) on CJP (AWS D1.5 B-U3c-S), half fuse pipe assembly, (piece mark identified as a124-13), to half fuse pipe assembly, (piece mark identified as a124-4), in the flat position (1G). QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that the OIW welder #S53, was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020).
QA Inspector noticed QC Inspector's Mike Gregson and Rob Walters were present and monitoring in-process welding parameters (amps/volts) and pre-heat temperatures, verifying Mr. Jerry Shepherd was in compliance with the applicable welding procedure specification (WPS 4020).
QA Inspector verified Mr. Jerry Shepherd was currently qualified for this welding process/position and performed a random pre-heat check and recorded temperatures of approximately 350 degrees Fahrenheit. QA Inspector also recorded random, in-process welding parameters (amps/volts) of 600 amps and 30 volts, which is in compliance with the OIW welding procedure specification (WPS 4020).

Hinge-K Pipe Beam Sub-Assembly a124-2: 5/05/09
a125 & b125 Ring Stiffeners to a124-2 Half Fuse
QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian, perform submerged arc welding (SAW) on PJP (AWS D1.5 TC-P5-S) weld joint #WM3-06 internal ring stiffener, (piece mark identified as a125), to half fuse pipe sub-assembly, (piece mark identified as a124-2), in the flat position (1G).
QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that Mr. Tim O'Brian was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020).
QA Inspector also noticed Mr. Mike Gregson and QC Inspector Rob Walters were present and monitoring in-process welding parameters (amps/volts) and pre-heat temperatures, verifying Mr. Tim O'Brian was in compliance with the applicable welding procedure specification (WPS 4020).
QA Inspector verified Mr. Tim O'Brian was currently qualified for this welding process/position and performed a random pre-heat check and recorded temperatures of approximately 350 degrees Fahrenheit. QA Inspector also recorded random, in-process welding parameters (amps/volts) of 590 amps and 30 volts, which is in compliance with the OIW welding procedure specification (WPS 4020).
QA Inspector noted that there were two remaining weld joints, identified as weld joint #WM3-04 and WM3-02 remaining, for completion of the internal ring stiffeners for this sub-assembly a124-2.

Hinge-K Pipe Beam Sub-Assembly a124-09: 5/05/09
a125 & b125 Ring Stiffeners to a124-14 Half Fuse
QA Inspector noticed this a fuse sub-assembly a124-09 had been previously transferred from the OIW South storage yard to OIW fabrication shop and was sitting idle, pending SAW of the internal ring stiffeners, a125 and b125.

Hinge-K Pipe Beam Sub-Assembly a124-14: 5/05/09
a125 & b125 Ring Stiffeners to a124-14 Half Fuse
QA Inspector noticed this a fuse sub-assembly a124-14 had been previously transferred from the OIW South storage yard to OIW fabrication shop and was sitting idle, pending SAW of the internal ring stiffeners, a125 and b125.

Material, Equipment, and Labor Tracking

QA Inspector Sean Vance performed a verification of material,personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors. The following was observed at A & G Machine: 1 A&G supervisor, 1 A&G machinist, 1 OIW supervisor and 1 OIW machinist.

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer